Application No. 10/642,480
Attorney Docket: MA-582-US (MAT.024)

REMARKS

Entry of this Amendment is proper because it narrows the issues on Appeal and does not require further search by the Examiner.

Claims 1-3, 11-13, 31-33, 41-43, 58-59, 61, 65, 72-73, 76-77, and 80-83 are all the claims presently undergoing examination in this application. By this amendment, various claims are amended, and claims 14, 44, 62, 64, 74, 75, and 78 are canceled without prejudice or disclaimer. The amendments introduce no new matter.

It is noted that the claim amendments herein, if any, are made only to more clearly and completely define the invention and to assure grammatical and idiomatic English and improved form under United States practice, and are not made to distinguish the invention over the prior art, or for any statutory requirements of patentability. Further, Applicants specifically state that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1, 2, 14, 31-32, 44, 58, 62, 72, 74-76, 78, and 80-83 stand rejected under 35 U.S.C. §102(b) over Aggarwal (US 6,154,463). Claims 3, 11-13, 41-43, 59, 61, 64-65, 73, and 77 stand rejected under 35 U.S.C. §103(a) over Aggarwal in view of Sistanizadeh, et al. (US 6,963,575) and Larsson, et al. (US Pat. App. Pub. No. 2003/0161268). By this Amendment, claims 14, 44, 62, 64, 74, 75, and 78 are canceled, without prejudice or disclaimer; thus, the rejection of claims 14, 44, 62, 64, 74, 75, and 78 is moot.

These rejections are respectfully traversed in the following discussion.

THE CLAIMED INVENTION

The claimed invention, as exemplarily described in the embodiment of independent claim 1, relates to a node in a network. The node configures a spanning tree over a network

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to which a plurality of nodes are connected. The node includes means for generating a new

spanning tree after a network configuration change, a stable timer, and means for switching a

spanning tree to be used for forwarding to said new spanning tree.

The new spanning tree is generated after a network configuration change while the

node continues to operate only a spanning tree that existed before the network configuration

change.

The stable timer notifies of an expiration of a specified time indicating a stabilization

of the spanning tree.

The switching from the spanning tree to be used for forwarding to the new spanning

tree occurs only after receiving a notification of the expiration of the specified time from the

stable timer.

The present invention provides a network system, a spanning tree configuration

method, a spanning tree configuration node, and a spanning tree configuration program,

having multiple advantages over the prior art. The present invention is capable of lowering

the probability of occurrence of congestion and reducing the frequency with which delayed

arrival or loss of frames occurs due to congestion.   The present invention is capable of

reconfiguring a spanning tree, such as performing addition/remove of a node that belongs to

the spanning tree, without stopping the network. The present invention is capable of

distributing the traffic load. The present invention is capable of distributing the load without

stopping the network for spanning tree reconfiguration that accompanies a path change. In

the present invention, a path with the minimum cost to a destination is selected. The present

invention is capable of increasing the utilization ratio of a link, and distributing the load

without concentrating the load in the vicinity of the root node. The present invention is

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capable of <u>circumventing a network halt due to a root node failure</u>. The present invention is

capable of <u>preventing the spanning tree from being set up by passing through the</u>

<u>IEEE802.1D-using section, speeding up switching and route changes in the event of a failure,</u>

<u>and reducing the possibilities of occurrence of congestion and loss of a frame</u>.

THE PRIOR ART REJECTIONS

Applicant maintains the arguments of the previous Amendments. Some of those

arguments are repeated below for the convenience of the Examiner.

The Aggarwal Reference

Claims 1, 2, 14, 31-32, 44, 58, 62, 72, 74-76, 78, and 80-83 stand rejected under 35

U.S.C. §102(b) over Aggarwal. Claims 3, 11-13, 41-43, 59, 61, 64-65, 73, and 77 stand

rejected under 35 U.S.C. §103(a) over Aggarwal in view of Sistanizadeh and Larsson.

Claims 14, 44, 62, 64, 74, 75, and 78 are canceled, without prejudice or disclaimer; thus, the

rejection of claims 14, 44, 62, 64, 74, 75, and 78 is moot.

Applicant respectfully traverses these rejections.

The Examiner alleges that certain features of the claimed invention are disclosed by

Aggarwal. Applicant respectfully traverses these rejections. Applicant submits that there are

features of the claimed invention which are neither disclosed nor suggested by Aggarwal.

Aggarwal fails to disclose or suggest at least, "A node that configures a spanning tree over a

network to which a plurality of nodes are connected, comprising: means for generating a new

spanning tree after a network configuration change while continuing to operate only a

spanning tree that existed before the network configuration change; <u>a stable timer</u> that

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notifies of an expiration of a specified time indicating a stabilization of the spanning tree; and

means for switching a spanning tree to be used for forwarding to said new spanning tree <u>only</u>

<u>after receiving a notification of the expiration of the specified time from said stable timer</u>," as

recited in independent claim 1. The remaining claims recite similar features, and Applicant

traverses their rejections on substantially similar bases.

Aggarwal discloses only that switching from a current tree becomes effective after the

completion of computation of a new tree. Aggarwal fails to disclose or suggest the stability

of the new tree.

With the present invention, switching from transmission on the old tree to

transmission on the new tree is performed <u>after the stability of the new tree is established</u>.

The stability of the new tree is indicated by the notification by the stable timer that the

specified time has expired. In the present invention, simultaneous transmission to both trees

is not performed.

Thereby, the present invention provides the advantage that there is little wasteful

traffic. Further, the present invention thereby provides high use efficiency of resources.

The Examiner alleges that Aggarwal discloses certain features of the claims at col. 14,

lines 54-65, and col. 15, lines 8-9.

However, the cited reference discloses only, *"Computation of proposed trees is done*

synchronously with other activities, and can be done as a background process. The

recomputed CO Steiner tree is referred to herein as the proposed Tree(G). If the difference

between the two trees exceeds a predetermined threshold, then GR(G) initiates a switch tree

operation for switching from the current Tree(G) to the proposed Tree(G). Although join and

leave operations can be acknowledged during a switch tree operation, only the situation

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*where join and leave operations are queued until the switch tree operation will be completed
is described."* Aggarwal, col. 14, lines 54-65. *"Once the new CO Steiner Tree computation
is complete, GR effects the switch from the current tree."* Aggarwal, col. 15 lines 8-9.

However, Aggarwal fails to disclose or suggest the features recited in the claims. In
particular, Aggarwal fails to teach or suggest at least the features "switching a spanning tree
to be used for forwarding to said new spanning tree <u>only after receiving a notification of the</u>
<u>expiration of the specified time from said stable timer.</u>" The other independent claims recite
similar features. Applicant traverses the rejections of the other claims on substantially
similar basis.

Aggarwal fails to disclose or suggest wherein the node switches from a spanning tree
to be used for forwarding to said new spanning tree <u>only after receiving a notification of the</u>
<u>expiration of the specified time from said stable timer.</u>

Instead, and as quoted above, Aggarwal teaches switching from a current Tree(G) to a
proposed Tree(G) <u>whenever there is sufficient difference</u> indicating change between the two,
<u>without regard to whether such changes have settled to a stable configuration.</u> *"If the*
difference between the two trees exceeds a predetermined threshold, then GR(G) initiates a
switch tree operation for switching from the current Tree(G) to the proposed Tree(G)."
Aggarwal, col. 14, lines 58-61.

Further, in the present invention, switching involves a selection of a spanning tree
used for forwarding. However, only one such spanning tree is used by any node at any time.

Aggarwal, on the other hand, discloses, *"Once the new CO Steiner Tree computation*
is complete, GR effects the switch from the current tree. During the transition to the new
tree, routers are forwarding messages on both the current and the proposed tree links, thus

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providing fault-tolerance for incorrectly propagated packets during the transition period.

This aspect of the present invention is a dualcast operation because the session is multicasted

on two separate Steiner trees. A true Dualcast, such as disclosed by Aggarwal et al., supra,

can operate at the application level for additional reliability." Aggarwal, col. 15, lines 8-17.

Thus, Aggarwal fails to disclose or suggest at least these features of the claims.

Therefore, Applicants respectfully request the Examiner to reconsider and withdraw

the rejection of all claims over Aggarwal or over Aggarwal in view of Larsson.

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CONCLUSION

In view of the foregoing, Applicant submits that claims 1-3, 11-13, 31-33, 41-43, 58-59, 61, 65, 72-73, 76-77, and 80-83, all the claims presently undergoing examination in the application, are patentably distinct over the prior art of record and are allowable, and that the application is in condition for allowance.   Such action would be appreciated.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned attorney at the local telephone number listed below to discuss any other changes deemed necessary for allowance in a telephonic or personal interview.

To the extent necessary, Applicant petitions for an extension of time under 37 CFR §1.136. The Commissioner is authorized to charge any deficiency in fees, including extension of time fees, or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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